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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,102	07/22/2003	Pedro M. Buarque De Maccdo	50699/11	8891
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AMSTER, ROTHSTEIN & EBENSTEIN LLP 90 PARK AVENUE NEW YORK, NY 10016			EXAMINER SAFAVI, MICHAEL	
			ART UNIT 3637	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/625,102	<b>Applicant(s)</b> BUARQUE DE MACEDO, PEDRO M.	
	<b>Examiner</b> M. Safavi	<b>Art Unit</b> 3637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,5,13,14,23,27,29-31,37,42-47,51-59 and 63-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,13,14,23,27,29-31,37,42-47,51-59 and 63-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                          |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                         | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                     | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/2/07; 7/16/07</u> . | 6) <input type="checkbox"/> Other: _____                                                |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 02, 2007 has been entered.

### ***Information Disclosure Statement***

The information disclosure statement filed May 02, 2007 fails to comply fully with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because Applicant has not provided a full copy of the foreign patent document WO 2005/007989. Further, the international search report for PCT/US04/023030 does not appear to be a foreign patent document. It has been placed in the application file, but the information referred to therein, with respect to the item listed under Foreign Patent Document has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

***Claim Objections***

Claim 53 is objected to because of the following informalities: Claim 53 recites "said tension member is comprised of a tension bolts." However, it would appear that a "tension member" is comprised of --a tension bolt--. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grady, II (U.S. Patent No. 4,324,037) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).**

Grady, II discloses, Figs. 7 and 8, an arrangement, (column), of tile units 82 held together as by tension bolts 90. At least one tile is placed between at least two metal

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beams 84 and held in compression by the tension bolts 90. Grady, II does not present the tiles 82 as made of a foamed glass.

However, each of Zeinetz and Lagendijk teach utilization of foamed glass tiles or blocks within a tensioned structural arrangement. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place while Figs. 1, 2, and 6 of Lagendijk shows tension members 33, 34, 36, 45, etc. outside of the foamed glass units, holding the foamed glass units in place, col. 3, lines 30-60 and col. 4, lines 34-37.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teach utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi with each of Williams et al. and Blaha disclosing use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry, col. 1, lines 19-22 of Williams et al. and col. 1, lines 10-28 of Blaha.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

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Therefore, to have provided the structural column of Grady, II with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by either of Zeinetz and Lagendijk when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 14, 23, 27, 29, 31, 42-47, 51, 53-59, 63, and 65**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 23, 27, 42-47, 52, 54-59, and 63**).

As to **claims 13, 23 and 37**, to have placed the tension bolts 90 under a tension so as to prestress the foamed glass tile units of the resulting Grady, II assembly, thus forming a more strengthened arrangement, would have been obvious to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 23, 27 54-59, and 63**, the resulting Grady, II assembly discloses a prestressed assembly for use in buildings or other structures comprising: at least one prestressed foam glass tiles, having a prestressed compression of 1000 to 10,000 psi or greater; at least two metal beams 84; and one or more tension members 90, wherein

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said at least one foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by said one or more tension members.

As to **claims 14, 31, 53 and 65**, the resulting Grady, II assembly discloses a prestressed assembly having tension members comprised of tension bolts 90.

As to **claims 30 and 64**, to have formed the metal, force transmitting beams 84 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

**Claims 1, 5, 13, 14, 42-47, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).**

Ellis discloses, Fig. 2, an arrangement, (column), of tile units 12 held together as by tension members 30 or 26/28/30. At least one tile is placed and held in compression by the tension bolts 30 or 26/28/30. Ellis does not present the tile units 12 as made of a foamed glass.

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However, each of Zeinetz and Lagendijk teach utilization of foamed glass tiles or blocks within a tensioned structural arrangement. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place while Figs. 1, 2, and 6 of Lagendijk shows tension members 33, 34, 36, 45, etc. outside of the foamed glass units, holding the foamed glass units in place, col. 3, lines 30-60 and col. 4, lines 34-37.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teach utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Ellis with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as



taught by either of Zeinetz and Lagendijk when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 13, 14, 42-47, and 51-53**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 14, 42-47, and 51-53**).

As to **claims 13 and 52** to have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 14 and 53**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

**Claims 23, 27, 29-31, 37, 54-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No.**

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**3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937) as applied to claims 1-5, 13, 14, and 42-53 above, and further in view of Grady, II.**

As to **claims 23, 27, 29, 54-59, and 63**, the resulting Ellis assembly discloses a prestressed assembly for use in buildings or other structures comprising: a plurality of prestressed foam glass tiles, having a prestressed compression of 1000 to 5,000 psi or greater; a metal beam 18/20, at the top thereof, and one or more tension members 30, or 26/28/30, with the foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by the tension members. The resulting Ellis assembly does not disclose the tiles between two metal, force-transmitting beams.

However, Grady, II teaches applying metal force transmitting beams on either end of a structural arrangement so as to better distribute forces when tension is applied to the respective tension members 90.

Therefore, to have provided the resulting Ellis assembly with a second or lower metal force transmitting beam to cooperate with the upper force transmitting beam, thus effecting a more uniform distribution of forces when tension is applied to the respective tension members 30, or 26/28/30, would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Grady, II. To have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement,

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would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 30 and 64**, to have formed the resulting upper and lower metal, force transmitting beams 18/20 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious to one having ordinary skill in the art at the time the invention was made.

As to **claims 31 and 65**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 37 and 66**, the resulting Ellis assembly discloses that the tension members are not within the foam glass tiles.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 have been considered but are not persuasive.

The declaration of Pedro M. Buarque De Macedo appears to present nothing more than matter of opinion. As such Examiner will address the arguments presented within pages 7-53 of the response.

As for Applicant's remarks found on pages 11- of the response, Applicant argues that neither of Zeinetz '316 and Lagendijk '656 teaches prestressing of a foam glass tile.

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However, the utilization of the foam glass units of Zeinetz '316 and Lagendijk '656 indeed involves prestressing of the foam glass units.

As for Applicant's argument that neither of Zeinetz '316 and Lagendijk '656 teaches prestressing of a foam glass tile under a prestress compression of 4,000 psi or greater, each of Zeinetz '316 and Lagendijk '656 have been utilized to teach and suggest prestressing of foam glass tiles under any amount of prestress compression. The instant rejections set forth as evidence a showing of prestressing per se of foam glass structural units. Reference to each of Williams et al. '365 and Blaha '184 teaches utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi with each of Williams et al. and Blaha disclosing use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry. From this, one of ordinary skill in the art would realize that foam glass block can be used for sufficiently strong for structural purposes within the building industry. Reference to each of Jones et al., Elmer et al., and Ford teaches manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller. As such, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing the same density and pore size disclosed within the instant application. Therefore, one of ordinary skill in the art would reason that one can 1) manufacture a foam glass block having the necessary properties to be utilized within a sufficiently strong structure within the building industry

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and 2) apply a sufficient amount of prestress to the foam glass block or assemblage of foam glass blocks as deemed appropriate or necessary to establish a sufficiently strong structure within the building industry. Each of Grady, II '037 and Ellis '397 disclose as old and well known the feature of building modules placed in a prestressed assembly with the particularly claimed arrangement of building modules, tension bolt and beam members.

With all the applied prior art considered, one having ordinary skill in the building construction art would have found it obvious to arrive at the claimed invention when taking all the teachings set forth in the applied prior art. Such attainment taking into consideration the general knowledge of one of ordinary skill in the art. Such analysis need not seek out precise teachings directed to specific subject matter of a challenged claim, since court can take account of inferences and creative steps that person of ordinary skill in art would employ, *KSR International Co. vs. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Fact that claimed combination of elements was "obvious to try" might show that such combination was obvious under 35 U.S.C. §103, since, if there is design need or market pressure to solve problem, and there are finite number of identified, predictable solutions, person of ordinary skill in art has good reason to pursue known options within his or her technical grasp, and if this leads to anticipated success, it is likely product of ordinary skill and common sense, not innovation, *KSR International Co. vs. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

Further reference is made to Examiner's response to Applicant's arguments in each of the Office actions dated March 03, 2006 and September 11, 2006.

The declaration under 37 CFR 1.132 filed May 02, 2007 is insufficient to overcome the rejection of claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 based upon the applied prior art as set forth in the last Office action because: the declaration of Pedro M. Buarque De Macedo appears to present nothing more than matter of opinion.

Although factual evidence is preferable to opinion testimony, such testimony is entitled to consideration and some weight so long as the opinion is not on the ultimate legal conclusion at issue, *In re Chilowsky*, 306 F.2d 908, 134 USPQ 515 (CCPA 1962). In assessing the probative value of an expert opinion, the examiner must consider the nature of the matter sought to be established, the strength of any opposing evidence, the interest of the expert in the outcome of the case, and the presence or absence of factual support for the expert's opinion. See *Ex parte Gray*, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989); *In re Beattie*, 974 F.2d 1309, 24 USPQ2d 1040 (Fed. Cir. 1992); and *Ex parte George*, 21 USPQ2d 1058 (Bd. Pat. App. & Inter. 1991).

In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued

examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Safavi whose telephone number is (571) 272-7046. The examiner can normally be reached on Mon.-Thur., 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on (571) 272-6867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



M. Safavi  
July 20, 2007

MICHAEL SAFAVI  
PRIMARY EXAMINER  
ART UNIT 3637